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A
CHEMICAL ANALYSIS
OF THE
LEMINGTON WATERS,
WITH A
Practical Dissertation
ON THEIR
MEDICAL EFFECTS:
AND
Instructions
FOR
Cold and Warm Bathing.

By AMOS MIDDLETON, M. D.

NON EST VIVERE SED VALERE VITA.

The THIRD EDITION, *revised & enlarged.*

WARWICK:
PRINTED AND SOLD BY HENRY SHARPE,
Advertiser-Office, High-street.

1814.

1674

TO

DR. WILLIAM KERR,

PHYSICIAN

To the General Infirmary,

AT NORTHAMPTON.

DEAR SIR,

I feel great pleasure in laying before you these few practical pages; as, from long experience, and extensive opportunities of observation, you must thoroughly know how to appreciate the futility of hypothesis, and the infinite importance of practical information.

I have also a strong wish to offer you something, as a small tribute of gratitude for your professional kindness and assistance; as a slight remembrance of old family friendship; and as a general token of respect for your acknowledged medical talents, your eminence as a Physician, and your strenuous exertions in the investigation, in the support, and in the recommendation of these particular WATERS.

I have the honor to be,

DEAR SIR,

Your humble,

And most obedient Servant,

AMOS MIDDLETON.

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PREFACE.

AFTER the lapse of so many ages, since Medicine first began to be cultivated in Greece, as a distinct and lucrative profession; and after all the innumerable succession of plausible dogmatists, who, by the fertile magic of creative hypothesis, and fanciful conjecture, have worked up a few slight materials into spacious and magnificent edifices; the real foundations of this important Science seem as yet but imperfectly laid; and consequently, even to the present hour, the splendid superstructure of the Moderns, is scarcely less tottering and unstable than was the evanescent greatness of its departed predecessors. In reply to this, I know it will be vehemently urged by the orthodox upholders of the present system, that their doctrines have received the most unqualified assent; that their practice has been most universally adopted; and that their fundamental principles have been established by incontrovertible facts, on a solid and immoveable basis; while, by the most irresistible arguments, they have totally overthrown and trampled into the dust, the fragile and illusive opinions of their visionary and defeated opponents. But whilst we listen, with proper deference, to these assertions, let us also recollect that assertion is not proof; and that such, precisely, has been the cry raised in favour of every prevalent system of Physic, since the venerable days of HIPPOCRATES. Besides, whoever will spare but a few short moments, to reflect on the rapid and incessant vicissitudes, which both the most favourite principles, and most approved practice have undergone within these *very few* years, will be but little disposed to place a blind, and implicit confidence in any hypothetical reasoning, however varnished over with the syren gloss of ingenious supposition, or sanctioned by reverend custom, and the authority of mighty names. For, as far as custom, and the authority of names are concerned, which may indeed stamp error with dignity, but cannot convert it into truth; where shall we find a case more exactly in point than the now totally exploded, and ridiculous opinion, of the concoction of the blood by the liver; of its nocturnal and diurnal revolution through the veins; and of the animating *Vital Spirits*, which it was the sole business of the arteries to convey? Yet this same doctrine, this jumble of falsehood and confusion, with its whole dependent mass of high sounding nonsense, and pompous absurdity; was the firm, general, and unblushing creed of all the whole tribe of Physicians and Philosophers, from the first dawning of Physic, to the days of our truly great, and scientific HERVEY. What then could possess the sanction of greater authority, than a doctrine like this? A doctrine, which had existed for so many ages, and had ranked among its implicit believers, and strenuous defenders, many of those men, most deservedly celebrated in all antiquity, for their profound learning, their acute penetration, or dazzling and exalted genius.

IF, however, this example be rejected, as inapplicable to the present times, and if it be urged, that the ancient opinions were unsupported even by a shadow of proof, while the moderns rest solely for support on the basis of actual experiment; let the objector be pleased to remember the numerous, and diametrically opposite opinions of these same moderns, to whom he so confidently appeals; where one army of *real facts* is drawn up in battle array against another, and every "*New System*" is as regularly attended by a new set of accommodating experiments, as a *Quack Bill* is prefaced by a list of "*wonderful and miraculous cures*;" and all for what? To give a colour to the imposition; to bear witness to the virtues of the nostrum. Besides, what will the present pretenders to medical infallibility make of the portentous examples of these recent System-Builders? What is the warning held out by the once famous *Globules of the Continental Professors? Each regular series of larger globules, made up of six smaller globules, and these again, of six others smaller still; descending in a uniform and invariable gradation, exactly proportionate to the corresponding diameters of their respective arteries.

Or, in what light will they behold those admirers of scales and weights, the unintelligible, mathematical, and algebraical Physicians? who, computing by the laws of Hydrostatics and Hydraulics, with Logarithms in their heads, and clumsy glass tubes in their hands, affected to calculate with exactness, the pressure of the incumbent Air, the momentum of the impinging Fluids, the muscular force of the heart, the velocity of the Blood, the calibre of the Arteries, the capacity of the Veins, and the precise dimensions of every minute pore and invisible tube, as if *they* had been the makers of the Machine.

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* See an able exposition of these doctrines in John Bell's Anatomy, Vol. II.

Or, what can be said to the analytical Chemists, to their obtunding and sheathing, to their hooked corpuscles, their cones, and their spiculæ, to their * acute parts, dividing, and "cutting asunder, and breaking into smaller "pieces, the tough and viscid humours:" or to their "hard, rough, and pointed particles scouring and cleansing away the filth, sticking in "the passages:" or to others, "fastening the "parts together as by little wedges, or tying "them close as with cords?"—

It is not long, since an all-pervading Æther was accounted the sole and sufficient cause of elasticity, of gravity, of electricity, of magnetism, "† of heat, light, sensation, muscular motion, "and, in a word, of every phenomenon in "nature.

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* Turner de morbis cutaneis. Pages 508 and 509, who borrowed this from Zypæus.

† See Brown's Observations.

We are all of us acquainted with that potent, primary, and celebrated affection "*Spasm*;" with the "pretended sufficiency of the Brunonian "doctrine, for *all* medical theories;" with that "subtle fluid, the Spirit of Animation‡ residing "in the brain and nerves," the grand *primum mobile* of Darwin: with the omnipotent powers of electricity and galvanism: and with the novel, astonishing, and universal effects of the Gases: by which we were, according to Dr. Beddoes, "to exalt the mental and bodily powers, to "renovate excitability, to convert torpid into "vivacious, cold blooded into warm blooded "animals, and come to rule over the causes of "pain and pleasure, with a dominion as absolute, "as we now rule over domestic animals, and the "other instruments of our convenience."

Such have been the several delusive speculations, such the successive *ignes fatui* of the day: and, notwithstanding all of them are now growing into disrepute; and most of them have rolled away as silently as the periods which produced them; yet still we go on in a varying round; other fabrics are building; other systems are framing; and the present race of young men are remarkable for nothing so much, as an over anxiety, and morbid appetite after the discovery of new inventions; blameably neglecting the acquisition of that which is already sufficiently known, and too frequently despising the assistance of many of those less showy, but more important, and most invaluable sciences, which have tended so much to the real advancement of knowledge, and raised the practical part of Medicine to all that high respectability, which it at present possesses.

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‡ Darwin's Zoonomia.

The primary rise of this strange infatuation may perhaps be ascribed to that unconquerable propensity, implanted in the mind of man, for investigating the secret operations of nature, and inquiring into the hidden causes of every thing around him; which sentiment, powerfully as it preponderates, too frequently mistakes the true means of arriving at the end proposed: for, always most dearly prizing that which is least understood, and eagerly thirsting after applause, which the supposed discovery of new truth universally commands, we invariably begin "by the assumption of fancied causes," and then proceed to warp and distort facts to the support of our favourite hypothesis, instead of first endeavouring, by a patient, careful and laborious collection and examination of *facts themselves*, to trace each particular, back to its original source, till at last, we arrive at some grand productive principle, or broad and sweeping generality. Or, perhaps, this increasing evil may be ascribed to some less excusable motive, to vanity associated with indolence; to impatience of long continued labour; to inability or unwillingness to endure a state of mental inquietude, and a secret consciousness of doubt: for, every one knows, that it is a much easier thing to speculate and to theorize, than thoroughly to understand and digest old and established truths; or, by honest and unabating industry, to gather up into the memory a store of undeniable facts: to survey them in every possible light; to guard against the deception of appearances; and by indefatigable caution, and accurate observation, to seize every minute agreement, and weigh every discordant particular. For to what, but to the total rejection of all unfounded supposition, to the general facility of reducing every dogma to practice, and of examining, and re-examining the several results of every experiment and operation, do we owe the rapid, and substantial improvement of Anatomy, of Surgery, and of practical Chemistry? though it must be confessed, that, in the *theoretical* department of the latter science, there is by no means the same degree of certainty. And yet, no paucity of positive decisions, no want of a sufficient number of arbitrary alterations, no reluctance in throwing aside old technical terms, no tardiness in the invention and adoption of new ones, can be ascribed to the modern Chemist, or indeed to the modern Physician: specious, however, as may have been their reasonings, and confident as may have been their assertions, yet even the great, and boasted throne of the modern Antiphlogistics themselves, has lately been shaken to its very basis, by the brilliant and important discoveries of the accurate and penetrating DAVY.* Indeed, I imagine that another Æra, both in the annals of Chemistry and Medicine is probably not very far distant; and possibly, before the expiration of half another century, many of the most celebrated, and fashionable doctrines of the present day, will be looked upon with as much contempt, as we now review the absurd and fantastic reveries of the ancient dreamers upon Alchemy; where the little of pure truth, and real discovery which the books of such writers contain, is forgotten and set aside, like old family portraits, on account of the preposterous decoration, and ridiculous extravagancy of fancied ornament, by which their few chaste lines of simple nature, and unaffected beauty, are so gorgeously obscured and confounded.

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* See DAVY's Paper on the Oxymuriatic Acid; his Disquisitions on negative and positive Electricity, on Caloric, and on Light.

It is for these reasons; from a serious consideration of this fickle and ever mutable spirit of Hypothesis, which, an endeavour to trace back, from the earliest ages, the History of medical and chemical opinions on the subject of Mineral Waters, has more forcibly impressed upon my mind; and, from an earnest conviction of the total inutility of theoretical speculation, where useful instruction is the principal object in view; that I have determined, while preparing a third edition of these observations for the public, to adhere to the same plain, unassuming, practical method, which was the distinguishing characteristic, and, I must confess, the chief merit of the former. It was my aim in that edition, and shall be more particularly so in this, to put into the hands of the invalid, a short and easy, but condensed and comprehensive account of all that is necessary to be known, as to the nature of the LEMINGTON WATERS, or observed, as to the method of using them. I did not then scruple, nor shall I now, to collect from every different source, whatever may appear important from its practical utility, or suitable to my purpose, from its plainness and perspicuity: and as I simply profess to instruct the ignorant, and caution the unwary; and as I neither did, nor do pretend to any very great originality of materials, nor aspire to seize and captivate the imagination by dazzling, but futile theories; I hope I shall be excused, if that kind of merit be not found in my book, which I never had the vanity to assume, and that class of subjects, which I never *intended* to place there. To the admirers of such subjects, I would recommend the valuable productions of DR. LAMBE, and DR. SAUNDERS. The scientific Chemist will peruse, with pleasure, the highly ingenious, but purely chemical work of the former, which, however excellent as an analysis, touches, in no respect, upon the medical virtues of the WATERS, and to a common reader, desirous only of such information, must tend rather to confuse than inform. While those, who are anxious to enter more extensively into all subjects connected with Mineral Springs, than the limits of a pamphlet will allow, may consult the copious, and general Treatise of the latter Gentleman, whose long experience, and profound knowledge of the subject justly entitle him to confidence.

FROM the long list of successful Cases that have fallen under my care, I had, in my last edition, subjoined a few, which appeared remarkably adapted to illustrate the beneficial effects of these Waters, in some of the more general and important maladies; but, I am induced to omit the insertion of any Cases in the present edition, because, in consequence of the very liberal and praiseworthy conduct of the Proprietors of the New Baths, who, from motives of pure benevolence, have appropriated a part of their elegant Building to the sole use of the Poor, an arrangement is in contemplation, by which an opportunity will be afforded of publishing annually, under the sanction of a Medical Society such Cases as may be thought worthy of public attention; and because I am aware with what suspicion Medical Cases, however well authenticated, are received, from an individual, when they are given to favour any particular practice, or to recommend any particular Water; besides, the insertion of names is a great objection in private practice, and I consider the reputation of the Waters to be too well established to require such assistance.

Anxious to obviate all possibility of mistake, and to prevent the reputation of a remedy, so well deserving of public notice, from being sullied by failures on account of misapplication, and improper collateral treatment, I have added to the slight catalogue of diseases, in which these Medical Springs are more immediately indicated, a few succinct directions, for the rational observance of such cautions, and the adoption of such a regimen, as will be most likely to increase their salutary efficacy. And this from local situation, and the ample experience of twenty years, I flatter myself, I am, in some measure, capable of doing.

In reviewing the several pages of the work, I have carefully endeavoured to blot out all such parts, as seemed irrelevant to the main intention; or which from the improved state of Science, or more mature consideration, I had reason to think were in any degree erroneous: and if, at last, the result of the whole, shall be only to forward, or excite others, more successfully to prosecute the subject, I shall so far, at least, have the consolation of reflecting, that I have not laboured in vain.

PRELIMINARY REMARKS.

UNTIL the time of DR. LAMBE's Analysis, in 1797, neither the Village of LEMINGTON PRIORS, nor the Mineral Springs, for which it is now so deservedly famous, were either much known or much noticed. It is true, that the WATERS had been slightly mentioned by most of our older writers, but their reputation had extended only to the country people in the neighbourhood, who flocked in numbers, every day, to drink at the common Spring. Upon the appearance, however, of DR. L's Papers in the "MANCHESTER MEMOIRS," they began to excite attention, and, their efficacy being acknowledged by DR. KERR and DR. JOHNSTONE, through the recommendation of those Gentlemen, they rapidly gained ground in the public estimation. Since that time, the place has been constantly increasing, and the excellent effects produced by the Waters in many chronic disorders, in plethoric habits, in diseases of the skin, and in visceral obstructions, particularly such as have arisen from a residence in hot climates, or from too great indulgence in the pleasures of wine and the table, have stamped them with the highest value, amongst that class of natural medicines to which they so eminently belong. Instead of an insignificant village, known only to a few invalids, who, from the benefits they received from the Waters, were contented to put up with any accommodation, LEMINGTON is now become the resort of rank, elegance, and fashion; spacious buildings are constructed, both for hot and cold Bathing; the *Public Spring* is inclosed in a handsome stone edifice,* for the accommodation of those who drink the Waters; a grand, extensive, and beautiful new range of houses has been erected, fit for the reception of people of the first distinction; and every convenience, that health, or sickness, can require, is amply provided. From the anxiety of the sick, and from the eager attention and persevering efforts of speculative individuals, many new Springs have been discovered; and instead of one solitary fountain, there are now no less than seven. But as the medicinal properties of all of them appear to be invariably the same, and, as the following pages are intended, as I before mentioned, rather for the Invalid than the Chemist, I shall confine myself to a simple statement and explanation of the medicinal ingredients contained in one Spring. This remark applies equally well to the *New Spring*, by which the numerous and elegant Baths on the bank of the river, are supplied; for, upon a careful examination, I find this Water to contain the same ingredients, and nearly in the same relative proportion as the others. I have been induced to adopt this method as the Waters are liable to be in some measure affected by the weather, and because, after repeated examination, I find no material difference in the chemical results obtained from a separate analysis of the several Springs. Instead of enumerating, as is usual, the various experiments made, and expedients used to ascertain with exactness the different gasceous and solid products of the Waters, I have preferred laying before my readers, a plain table of their general contents, and a brief view of the nature and effects of the different component substances. In doing this, I have taken no notice of the *oxyds* and *oxygenated muriats* of *iron* and *mangenese*, on account of the imperfection of the tests which are necessary to discover them, the want of coincidence in different experiments for that purpose, the uncertainty at last, of their actual presence, and their almost infinite minuteness, if really present at all, which renders them of little or no consequence in estimating the medical effects of the Waters.

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* This has been done by the liberality of the late Earl of Aylesford, whose patronage was never wanting to any undertaking, for the public benefit.

A TABLE

OF SUBSTANCES

CONTAINED IN THE WATER.

Gasceous contents of a Wine Gallon,

IN CUBIC INCHES.

Chemical Names.	*English Names.*	*Quantity.*
*Sulphuretted Hydrogen Gas	or Hepatic Air	. 25
†Nitrogen Gas	— Mephitic Air	3 . 5
Carbonic Acid Gas	— Fixed Air	. 75

Solid Contents of a Wine Gallon,

IN GRAINS.

Carbonat of Iron	or Carbonated Iron	. 75
Sulphur	— Sulphur	. 25
Muriat of Magnesia	— Muriated Magnesia	50 .
Muriat of Soda	— Common Salt	430 .
Sulphat of Soda	— Glauber's Salt	160 .
Sulphat of Lime	— Gypsum	135 .

* Formerly called Hepatic Gas.

† ———————— Azotic Gas.

On Sulphuretted Hydrogen Gas, or Hepatic Air.

Sulphuretted Hydrogen Gas is a very fetid, elastic fluid, somewhat heavier than Atmospheric Air, and soluble in water, smelling very strongly like the scourings of a foul gun-barrel. It kills animals quickly, turns syrup of violets green, extinguishes bodies in combustion, and, mixed with Oxygenous, or Common Air, flames, and detonates by the electrical spark. This Gas is quickly destroyed by atmospheric air. The oxygen of the atmosphere combines with the hydrogen, and forms water, while the sulphur is precipitated; and hence arises the quantity of that body, which we see about Mineral Springs. Water may be easily made to absorb nearly twice its bulk of this Gas, and it is to this absorption, that the Waters of *Harrowgate, Moffat, Aix-la-Chapelle, Bareges,* and several others, owe their principal medical celebrity. When internally taken, the sulphur, rendered highly diffusible by the hydrogen, seems to penetrate into all parts of the system, and to pervade the whole mass of the fluids. Lemington Water, when fresh drawn, smells strongly of this Gas, but from its very loose adhesion to the water, it soon loses this property, like all other Springs of the same nature, and becomes, on exposure, almost inodorous. From hence we learn the propriety of drinking this Water, as fresh as possible from the Spring; or, if it be taken away in bottles, of keeping them closely corked: though this latter expedient is not quite so effectual as could be wished. If a piece of polished metal be plunged into water, strongly impregnated with this Gas, its surface is immediately blackened;* but the best tests for the presence of the Gas in water, are the different metallic salts. With a solution of arsenic it gives a fine yellow precipitate, a dark brown, with acetate of lead, and various other precipitates, differing more or less, in colour and quantity, with various other metals.

Nitrogen Gas, or Mephitic Air.

This aeriform fluid is uninflammable, incapable of supporting combustion, fatal to animal life, and somewhat lighter than Atmospheric Air. It is owing to this comparative lightness, that it is enabled to rise through the air, after being emitted from the lungs; without which property, it would have occupied all the lower parts of the Atmosphere, and produced universal pestilence and destruction. As it is however, it has the effect of neutralizing, in some measure, the effect of Oxygen Gas, the other principal constituent of the Atmosphere, and rendering it fit for respiration and combustion. Plants grow and vegetate freely in this Gas, and it seems to be the grand agent which Nature employs, in the process of animalization, converting vegetable into animal substances, and entering into the composition of *all* animal bodies. It is computed, that the human blood absorbs from four to five ounces in every twenty-four hours. The utility of this substance may be estimated from its enormous and almost incalculable quantity, being diffused over the whole earth, and forming 77 parts out of a 100 of the whole Atmosphere. If this quantity were very considerably less, or, if its proportions with Oxygen in Atmospheric Air were reversed, the air taken in by respiration, would become a most violent stimulus; all the secretions would be amazingly increased; the blood would flow with furious rapidity: and the tone of the vessels, thus stimulated to vehement action, would be destroyed by over excitement. From hence, we may easily infer the great success of this Gas, when administered for a length of time, in inflammatory constitutions, and all cases of increased irritability. Its presence in Mineral Waters is not very common, and from its slight adhesion, it is easily expelled by a very little heat. It does not seem to give any very sensible properties to the Water in which it is found, nor is it discoverable by any single test whilst in combination; but, when set at liberty, and received in proper vessels, it is easily distinguished, and its presence and proportion in the Lemington Water, has, in this manner, been frequently ascertained, beyond all shadow of doubt.

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* As this Gas possesses many acid properties, combining with earths, alkalies and several metallic oxyds, and yet has no Oxygen in its composition, it should seem to contradict the assertion of Lavoisier, that Oxygen was the only cause of acidity. This fact, with the additional ones to which I before alluded, brought forward by Mr. Davy, in the Philosophical Transactions, will hereafter, perhaps, afford a handle by which the plausible system of the French Chemists may be finally overturned.

Carbonic Acid Gas, or Fixed Air.

Carbonic Acid Gas, is invisible, elastic, the weakest of all the acids, perfectly without smell, destructive to combustion, unfit for respiration, and twice as heavy as Atmospheric Air. It remains unchanged by the application of heat and light, and is of all known acids the most abundant in nature, being found in great plenty in chalk, limestone, marble, &c.; indeed, a single cubic inch of the latter substance contains more Carbonic Acid in a state of combination, than, if released, would fill a six gallon vessel. There is calculated to be about one per cent. of this Gas diffused through the Atmosphere, and perhaps the great quantities which are perpetually forming by the burning of different bodies, and by animal breath, seize upon the pestilent exhalations which arise from the earth, and arrest the numerous malignant vapours, which the putrefactive process is constantly sending forth. It is remarkable also, that vegetables absorb this Gas, which is fatal to men and animals, and give out Oxygen; while men and animals respire the Oxygen Gas, which is necessary to their existence, and give out Carbonic Acid, the proper food of vegetables. Carbonic Acid Gas has been given medicinally with great success. It has proved a most powerful antiseptic; is highly beneficial in malignant fevers; and has been found of much service in pulmonary consumption, and many other classes of disease. This Gas exists in great abundance in many natural Springs: the Waters which are impregnated with it, have a pleasant acidity, and a sparkling briskness, which is very agreeable. Water, by considerable pressure, may be made to combine with almost three times its bulk of Carbonic Acid, but, from its slight adhesion, it easily escapes upon agitation, or even long standing, and may be completely expelled by boiling the Water in which it occurs. The tests for this Acid in Water are various. Lime Water causes a turbidness, and chalk is precipitated. Litmus Paper is turned red: and the strong Mineral Acids disengage copious air bubbles.

Carbonat of Iron.

Carbonat of Iron is formed by the union of Iron and Carbonic Acid. It is one of the most common, the most useful, and the most extensively employed of all the metallic combinations. The solubility of Iron in animal fluids renders its exhibition as a medicine, safe, and of little difficulty; it is consequently, easily introduced into the circulating fluids, of which it forms, at all times, both in youth and age, a most material and important part; so much so indeed, that it has been said by a late eminent and popular writer, to occasion, either by its excess or deficiency, many of the most fatal and dangerous maladies, to which human nature is liable: however this may be, it has long been highly esteemed by the Physician, both for its efficacy as a particular, and universal tonic, in all cases of debility whether of the stomach, of the nerves, or of the system in general: as well as for its wonderful powers in supporting the almost exhausted frame, under the pressure of incurable diseases; and for its highly beneficial effects, when Nature, faltering in her work, requires to be urged to the performance of her customary functions.

Iron occurs most frequently in Mineral Waters, in the form of a Carbonat. This arises from the very common impregnation of natural Waters with Carbonic Acid. When this impregnation is pushed to its highest extent, Water so saturated with that Acid, will dissolve $\frac{1}{10500}$ of its weight of Iron. The affinity, however, of the Water, for Carbonic Acid is so very weak, that, upon exposure to the Air, it easily flies off, depositing the neutral Carbonat of Iron it had enabled the Water to take up, upon the channels through which it flows, or, after standing, upon the bottoms and sides of the vessels in which it may be kept, a portion generally swimming at the top in the form of a thin iridescent pellicle. In some few instances, Iron is found in Mineral Springs, combined with Sulphuric acid. Such waters may be readily distinguished from those containing the Carbonat, by the property, which they possess of continuing to strike a black with a solution of Galls, after they have been boiled, as boiling drives off the excess of Carbonic Acid in the Water, and causes the Carbonat of Iron to be precipitated.

The presence of Carbonat of Iron is easily ascertained by the tests of Gall-nuts, and the Prussian Alkali.

Sulphur.

Sulphur has been so long and so well known, that it must be unnecessary for me, in this place, to enter into any very detailed account either of its nature, or properties; particularly, as its most important *compound* has been explained in a former place, and as the quantity of the *simple* substance, contained in the Lemington Water, is almost too small to be worthy of notice.

It may be sufficient to remark, that it is employed by Nature "in a great number of her "operations, she presents it under many forms "among fossils; charges with it the waters "denominated sulphureous; mineralizes with it "the metals; causes it to pass into the vegetable "and animal fibres; and exhibits it to chemists "in an infinite number of combinations.

It has the curious property of breaking to pieces with a crackling noise, if a large piece be held in a warm hand. Its uses as a medicine are many and various: in cutaneous disorders, especially, it has great power, for one of the most obstinate of which it is a well known specific. However exhibited, it penetrates easily through the most minute ramifications of the extreme vessels, and powerfully impregnates all the secretions.

Muriat of Magnesia.

Muriat of Magnesia is a salt of an extremely bitter, unpleasant taste, not easily crystallized, soluble in its own weight of water, and in five parts of Alcohol: it deliquiesces very speedily when exposed to the air, is decomposed by a strong heat, and when highly dried is exceedingly caustic. It is very abundant in Sea Water, and is found in the Waters of *Harrowgate, Cheltenham, Tunbridge, Bristol, Kilburne, Enghien*, and several others. It is an excellent cooling aperitive Salt, and exists in greater quantity in the Lemington Water than in almost any other, *Harrowgate,* I believe, excepted. When held in solution, it is easily detected by a combination of well known chemical tests, amongst which nitrate of Barytes and Alcohol are generally the principal.

Muriat of Soda, or Common Salt.

This Salt is the most abundant of any in nature: the Sea contains an almost incalculable quantity; and prodigious masses are hidden in the bowels of the earth. Its culinary use, as a condiment to our food, is known to every body, and it is generally supposed to furnish the necessary degree of soda, to keep the bile in an alkaline and antiseptic condition. It is a curious fact, that, in some of the back settlements of *America*, the wild beasts assemble to regale themselves wherever this salt is found; and some of the places are so much frequented by them, that the ground is literally trodden to mud; this will not appear singular, when the fattening property of our own Salt Marshes is taken into consideration, and when the fondness of the horse for it, and the quantity of milk given by the cow, when supplied with this salt are recollected. Muriat of Soda combines very quickly with water, in which it is extremely soluble; it is not altered by exposure to the air, and is volatilized by heat, but not decomposed; it yields, however, to the sulphuric and nitric Acids, to Barytes and to Lime. It is discoverable in Mineral Waters by no single test, but is readily distinguished by various re-agents.

Sulphat of Soda, or, Glauber's Salts.

SULPHAT OF SODA is the common cathartic Salt, so much used in medicine, and generally known by the name of Glauber's Salt.

IT is found plentifully in the Sea, and in many Mineral Waters, both in England and on the Continent. Its taste is at first like that of Common Salt, but it speedily becomes bitter and nauseous. By exposure to the air, it loses its water of crystallization, and falls into a fine white powder, which is of course much stronger of the saline ingredient, than the crystals. This circumstance ought always to be attended to, in proportioning the dose of this useful purgative. The LEMINGTON WATER holds a larger quantity in solution than any of the most celebrated Waters in this country, *Cheltenham* only excepted; and it is to this Salt and the Muriat of Magnesia, that the Waters of both places owe their principal effect on the bowels. Sulphat of Soda is found in mineral springs, in combination with many other earthy and alkaline Salts. Its presence is easily discovered by a process well known, and its quantity may be exactly estimated, by freeing the water of all other Sulphats, and precipitating the Acid, combined with the Soda, by means of Nitrat of Barytes. Sulphat of Barytes is then formed, and the proportion of this substance, when ignited, will determine the quantity of dried Sulphat of Soda; as 170 grains of the former indicate 100 of the latter.

Sulphat of Lime, or, Gypsum.

THOUGH this substance was well known to the ancients, under the name of Gypsum, its composition was not known till the time of MARGRAF and MACQUER, who analysed it, and proved it to be composed of Sulphuric Acid and Lime. It is one of the most frequent of all the Salts, that are found in natural waters; it has a very slightly nauseous taste, and imparts that roughness and peculiar harshness to most waters which spring from the ground, that occasions them to be distinguished by the name of *hard* waters. Such waters have, as is well known, the property of curdling soap; though Sulphat of Lime, at a common temperature, requires for its solution, 500 times its own weight of water. It is found crystallized in various forms, sometimes transparent, and sometimes opaque, but when pure it is of a white colour. It is soluble in sulphuric acid, decomposed by charcoal, unaltered by exposure to the air, and when heated undergoes a kind of fusion, but cannot afterwards be melted except by the most violent heat. It forms that very useful substance, called Plaster of Paris, when heated red hot and afterwards cooled. Its quantity, in mineral springs, is easily ascertained by evaporating a portion of the water to a few ounces, and precipitating the Sulphat of Lime, by means of weak Alcohol. The Precipitate may be then dried and weighed. If any of the earthy carbonats be present, they must be previously saturated with nitric acid.

COMPARISON OF THE

Lemington and Cheltenham Waters.

HAVING thus enumerated the medical contents of the WATERS, and explained their separate uses and properties, I shall now proceed to lay before my readers some account of their combined effects, when taken altogether, as they are found in the Lemington Springs. But, before making this attempt, it may be gratifying to many of those, who will peruse this pamphlet, to see these Waters compared with some of the other most celebrated Waters of England; from amongst these I shall select the CHELTENHAM WATERS, as they most resemble the LEMINGTON, both in the number of their ingredients, the proportion of those ingredients in a given quantity of Water, and their medicinal effects upon the human body, when internally taken. As the chief end in making this comparison, is to satisfy curiosity and promote the knowledge of the nature of the LEMINGTON WATERS, by referring the enquirer to the nature of a Medicinal Water, which is already well known and generally understood; I shall prefer using the old Analytical Table of DR. FOTHERGILL, to either of the newer, and more strictly accurate accounts of MR. ACCUM, or MR. JAMESON.

COMPARATIVE TABLE.

Gasceous contents of a Wine Gallon,

IN CUBIC INCHES.

LEMINGTON WATER.		CHELTENHAM WATER.	
Substances.	*Quantity.*	*Substances.*	*Quantity.*
Sulphuretted Hydrogen Gas	.25	Sulphuretted Hydrogen Gas	—
Carbonic Acid Gas	3. 5	Carbonic Acid Gas	30.368
Nitrogen Gas	.75	Nitrogen Gas	15.

Solid Contents of a Wine Gallon,

IN GRAINS.

Carbonat of Iron	.75	Carbonat of Iron	5.
Sulphur	.25	Sulphur	—
Muriat of Magnesia	50.	Muriat of Magnesia	25.
Muriat of Soda	430.	Muriat of Soda	5.
Sulphat of Soda	160.	Sulphat of Soda	480.
Sulphat of Lime	135.	Sulphat of Lime	40.

From the slightest survey of the foregoing table, it must be easy for any one, though ever so little acquainted with the sciences of Chemistry and Medicine, to perceive the similarity in the *general* composition of the two Waters; and the remarkable difference, in the proportions of one *particular* article, namely, the Carbonat of Iron. To explain the effects, which this difference is likely to produce upon the medicinal qualities of the Lemington Springs, and to give a short account of the nature of the Cheltenham Water, in order to compare its aggregate effects, with those of the Waters at Lemington, is all, therefore, that now remains to be done under this head. For the sake of perspicuity, I shall begin with the following short account of the Cheltenham Spring.

" Cheltenham Water, when fresh drawn,
" is not perfectly transparent; by standing it
" becomes turbid, and separates bubbles of air;
" it gives out a slight sulphurous odour, very
" perceptible on the approach of rain; to the
" taste, it is bitter, brackish, and chalybeate;
" it does not keep, nor bear transporting to any
" distance; for the chalybeate part is soon lost,
" by the precipitation of the iron, which takes
" place, even in the closest vessel, after a few
" days; and in the open air, it sometimes

" becomes fœtid. The sensible effects, produced by this water, on first taking it are a degree of drowsiness, and sometimes headache, but which pass off, even before its operation upon the bowels. Its operation, as a laxative, is highly salutary, producing neither griping, nor sense of weakness; so that it may be persevered in, for a length of time, without producing any inconvenience to the body; and during its use, the appetite will be improved, the digestive organs strengthened, and the whole constitution invigorated. In small doses it is apt to pass off by the kidneys. This water is much used in a variety of chronic diseases. In the cure of glandular obstructions, it is considered particularly beneficial, especially, where their seat is the liver and alimentary canal. Thus, it is a grand restorative for the injuries of a hot climate, in respect to the secretions of those organs; and even considerable debility, in such cases, is no objection to its use. Cutaneous eruptions are also much relieved by this mineral, where their appearance is occasional, and at stated intervals. In cases of simple debility, or relaxation, this water certainly yields to the other chalybeates; but wherever there prevails obstruction, or fixed local congestion, its exhibition is strongly indicated."

In addition to this brief, general account of Dr. Reece, I shall subjoin a short extract from the publication of Dr. Saunders; as the superiority of the Lemington Waters, in many respects, after reading this account, will be made very apparent.

" Among other chronic disorders that are
" much relieved by the Cheltenham Springs,
" we must enumerate a variety of Scrophulous
" affections, in different parts; but as these
" often require the assistance of *external ap-*
" *plication* the Sea has certainly here a very
" decided preference.

" Another class of diseases in which the
" advantage of Cheltenham Water is constant-
" ly experienced, is in some of the most dis-
" tressing and painful affections of the skin, of
" the kind usually termed scorbutic eruptions;
" that arise often without any very obvious
" cause, that chiefly depend on the habit of
" body, and make their appearance at stated
" intervals in painful ulcerations on the skin,
" producing a copious acrid discharge of lymph,
" and an abundant desquamation. In common
" with other saline purgative springs, this is
" found to bring relief in these most harassing
" disorders, but it requires to be persevered in

"for a considerable time, keeping up a constant "determination to the bowels. It is an advantage attending these saline waters, that "they may be used at once, without any preparation, nor is any other medicine often "required during their use, except, as has been "already mentioned, the occasional addition of "the crystallized salts, where the water itself "does not prove sufficiently active to the "bowels; and likewise the use of the *warm* "*bath* in several of the cases, and more especially *the diseases of the skin.*"

From what has been here said, it must be obvious to every one, how much the efficacy of the Cheltenham Waters would be increased, if they could be procured in sufficient quantity for the purposes of Hot and Cold Bathing, but from the scantiness of the stream this is rendered impossible. Upon this head, Lemington must ever possess a most decided advantage, as the quantity of the Mineral Water, furnished by the different Springs, is sufficient not only to answer the present demand for bathing and drinking, but also to afford a constant and regular supply to as many Baths, both hot and cold, as could be required by the greatest number of Invalids, that attend any watering place in the kingdom. The want of proper quantity of the saline Water for bathing being very sensibly felt at *Cheltenham*, it has been attempted to supply its place, by constructing Baths in different parts of the town, and filling them with common water; but the superior effects of the saline water are well-known and acknowledged by every medical practitioner. The excellency of Salt Water for external application, when compared with other water, seems to consist in the stimulating power of its saline particles, which, by their action upon the skin, prevent the ill effects which the cold Bath, from its debilitating tendency upon exhausted constitutions, whose vital powers are incapable of much re-action, is very apt to produce. But perhaps this may be better expressed in the words of Dr Currie, which at the same time, as they serve for an explanation of the meaning, will serve also as an authority for the doctrine; "I was led to prefer salt water to fresh," says the Doctor, "on account of the stimulating effect "of Sea Salt* on the vessels of the skin, by "which I apprehend the debilitating action of "cold is prevented. Salt water, either for the "purpose of immersion or affusion, is more "grateful to the patient than fresh water, and

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* *Lemington Water* contains this Salt in very great abundance, more so than any celebrated Water in the kingdom, except *Harrowgate*, the quantity in a gallon being 430 grains, and of saline contents altogether 775 grains.

"it is well known that it may be applied to the
"surface for a length of time, with much less
"hazard. Persons immersed in sea water, for
"some time together, preserve the lustre of the
"eye and the ruddiness of the cheek, longer than
"those in fresh water, of an equal temperature,
"and such persons exhibit the vital re-action
"stronger when removed from it."

As a Warm Bath, the WATERS of LEMINGTON, artificially heated, are highly serviceable; particularly in stiffness of the tendons and rigidity of the joints, the effects of preceding inflammation from the attacks of the gout and rheumatism. Patients afflicted with paralytic affections, often find most remarkable relief; it is well known that salt water, instead of losing its saline impregnation by being heated, contains a greater quantity in that state than when cold, owing to the evaporation of part of the water in which it is dissolved; for this reason, the Bath may be used at the highest point of heat which the skin can endure, and this in palsy is of much consequence. The combined use of the warm bath externally, and the internal exhibition of the waters, has been found an almost sovereign remedy for all diseases of the skin, not excepting some of those, even of the most deplorable nature; many people having come to Lemington, in a condition so miserable as to have been objects of pity to all around them, and returned so free from all symptoms and appearance of disease, as almost to stagger credulity in the relation of their former sufferings.

Except, as far as the influence of the Baths, and the weaker chalybeate powers of the Lemington springs can extend, the general effect of the two Waters is very nearly the same, in all those classes of disorders to which they can be applied. Upon the superior efficacy of saline water for the purpose of bathing, I have already spoken pretty largely; it now only remains to explain what effect the smaller quantity of Iron in the Lemington Waters is likely to produce, when they are applied to the same disorders as those for which Cheltenham is famous.

The metal exists under the same state of combination in both Waters, but the one has five times the proportion of the other. Though when we consider the ease with which the carbonat of Iron may be added to the water; administered in the form of a small pill; or taken in any other way whenever its exhibition is likely to be of use, we shall not regret the comparatively small quantity of a mineral, whose loss may be supplied with so much facility. But, though it can be so easily added, it cannot be taken from the water for the purpose of drinking without the

loss of other important ingredients, and in those diseases, where a simple chalybeate is indicated, the Cheltenham Water, from its strong action as a purgative, cannot with safety be used. For, to give the words of a very strong advocate for the Cheltenham Water, "there are some constitu-
" tions which are naturally languid or debilitated
" by disease, but which do not shew any marks
" of obstruction, or those symptoms which have
" been attributed to an acrimony of the fluids;
" and these cannot bear with impunity any
" constantly increased operation on the bowels."

From hence, it is easy to infer with how much hazard, the exhibition of such a water must be attended, when attempted to be employed as a chalybeate; the tonic power of the Iron being so much overbalanced by the effect of the neutral salts. On the other hand, the quantity of Iron which is held in solution by the several springs at Lemington, though, it be not sufficient to authorize their use, where, from simple debility without obstruction a chalybeate *only* is required, yet enables us to remove all those cases of languor and debility which *do* arise from obstruction, (and such cases are very frequent,) and we have thus the satisfaction of employing the water with perfect safety, wherever it can be of service, and are not liable, from its less complicated nature, to produce mischief, by its misapplication, in cases of doubt and uncertainty. Moreover, the quantity of the Carbonat contained in the Lemington Springs, seems to be abundantly sufficient to prevent a long course of this aperient water from producing any debilitating effect upon the constitution ; this quality, is however, undoubtedly assisted by the combination of the salts and their high state of dilution in an aqueous menstruum. The effect of the waters when taken into the stomach, is in a very high degree purgative ; a pint is generally a full dose for an adult, and few require more than three half-pints ; its operation is speedy, and produces none of that griping or flatulency, sickness, languor, or oppressive faintness, which is so often occasioned by common purgatives.

Having thus placed before my readers a brief account of the comparative effects of these Waters, and given by that means some *general* insight into their nature and medical properties, I shall now proceed before entering into any *particular* detail of their efficacy in individual diseases, to lay down a few of those necessary rules and general precautions, which every Invalid will find benefit in observing, whether the water be taken as an internal medicine, or applied to the skin as a warm, a cold, or a tepid bath.

GENERAL RULES.

" It will at first be necessary to reflect that
" mineral Waters, like other medicinal sub-
" stances, are appropriated to certain diseases
" only, and that the more powerfully they act,
" the greater mischief they are capable of doing,
" if improperly administered; for, if it be as-
" serted that they are capable of doing good only,
" without the power of doing harm; we may be
" satisfied that their qualities are too insignificant
" to merit notice."

This consideration indicates the necessity of some caution in the use of all waters which are said to possess *any* sanative power, and suggests the propriety of consulting some professional man upon the spot, whose judgment may determine how far the water is appropriate to each individual case, and in what manner it should be employed, so as to be most efficacious. There is, however, an advantage attending the Lemington Waters, in common with a very few others, that, wherever their use can be of service, they may be entered upon at once, without any danger, or necessity for previous preparation; for at all times, and in all cases, they invariably act upon the bowels as a mild and gentle purgative. The season for drinking them is during the whole summer, and in the spring and autumn, from March to November; but in cutaneous diseases they may be used during the winter with great advantage. The water should, if possible, be always drank at the fountain head, and never kept long exposed to the open air.

After a full dose, there is generally a slight determination to the head, which is manifested by a sense of drowsiness, and a little fullness across the forehead, but this speedily goes off of itself, or is immediately removed by a walk, a ride, or any gentle exercise; and indeed, I should always recommend some sort of exercise after drinking the water, as it prevents that sense of nausea and oppression, which arises from a quantity of *any* fluid, when taken into a stomach, preternaturally weak and irritable. In general, for an adult, I should advise half a pint of the water to be taken the first thing in the morning, while the stomach is empty, and the same quantity to be repeated in half an hour after. Should this quantity be found insufficient to keep the bowels open, and to act as a diuretic, I should recommend a tea spoonful of the salts to be dissolved in a wine glass of the water boiling, and added to each half pint when taken; this being far preferable to increasing the quantity of water to any great extent; for common prudence, independent of medical information, dictates, that the quantity of water taken into the stomach at one time, that some people require to act as a purgative, must be highly improper. By pursuing this method for a few days, the bowels will invariably be brought into such a relaxed state, that ever after, a pint or three half pints of the water will be found sufficient. But, if the stomach should be in such a debilitated state, from age or disease, as to reject this quantity of water when taken in the morning, which will be often the case, I should recommend it to be taken at night, as water gruel, and a small glass (about a quarter of a pint) at eleven in the morning after breakfast; as the irritable stomach, will at that time better receive it, and it will be found much more grateful if a little warm; to do this it is by far the best method to put the water into a bottle closely corked, and to immerse the whole in hot water, for by this means but little of the air can escape.

With regard to the time requisite to continue the use of the water, much depends upon the disorder, and convenience of the patient; a month or six weeks is the time commonly allotted for a trial; but this term is much too short for any great constitutional change to be effected, and it may be observed in general, that in those diseases for which the LEMINGTON WATERS are famous, for scrophula, and cutaneous eruptions of every kind, the longer they are continued, the more important and conspicuous will be the relief, which they are likely to afford.

WITH children, I have always found it the most pleasant way to give them the water at first with their meals; for they will take it at those times, when you cannot persuade them at others, and it is wonderful how soon they acquire a taste for it, and really prefer it after to common water; the quantity taken at a time must depend upon their age and constitution, but it will always be found that they will take more in proportion than adults.

ON THE COLD BATH.

So much has already been said and written on the subject of Bathing, so many excellent practical directions are to be found in almost every author upon the subject of Mineral Waters, and so much elucidation have both the theory of animal heat, and the effects of the bath, under every variation, received from the valuable works of the late DR. CURRIE, that little more is necessary to be done in this place, than to select, from a mass of materials, such parts and passages as are most conformable to my own experience, and most applicable to the nature of the work before me. There has been much disputing upon the causes of animal heat, the internal generation of caloric, and the production of that powerful re-action, which is always observed in a healthy person, to follow the shock of cold, upon plunging into the Bath. I have no intention here, to enter into controversy upon any of these points; but shall simply give such an account, as is most likely to be serviceable in preventing any dangerous mistakes in the use of this remedy, amongst those, for whose use I am writing. There can be no doubt, but that the external use of water has a most powerful effect in many disorders: and, when we consider the ease with which its temperature may be adapted to its intention, the numerous ways in which it may be exhibited, and the very different diseased actions which one or other of its modifications is capable of correcting, we shall certainly not be able to find any single remedy, whose powers are so many, or so highly diversified; or which, by acting upon so large a surface at once, produces effects so instantaneous, so beneficial, and so permanent. In acute fever, its use is very justly becoming general. The hurried pulse, the wandering and delirium of this malady, are always accompanied by excessive heat, a dry, parched skin, and an unperspirable state of all the extreme vessels. This state it is very difficult to overcome, except by the application of a cold medium, whose powers of conducting heat are considerable; amongst these, water is the best, from the easy regulation of its temperature, and its very rapid absorption of heat from bodies immersed in it, or with which it is brought into contact. There is a point of heat at which perspiration commences; and if, from any cause operating upon the exhalents, this process is prevented, no increase of temperature will cause it to flow: and the body, which by means of this powerful refrigerent was able to resist all external impression, and preserve its natural equable standard, even amongst the burning sands of *Africa*, and the scorching heat of the *Line*, becomes unable to throw off even its own internal heat as fast as it is generated, or to endure its accumulation; and hence arises all that train of violent and dangerous symptoms which are described as the attendants of ardent fever.

To relieve these symptoms, to restore perspiration, and to reduce the oppressive heat, are the immediate effects of the sudden application of cold water to the surface; and whether this be effected by affusion, or immersion, the same salutary end is equally obtained. "The sudden, "general, and powerful stimulus given to the "system dissolves the spasm on the extreme "vessels of the surface, and of the various "cavities of the body; the sudden and general "evaporation carries off a large proportion of "the morbid heat accumulated under the skin; "and the healthy action of the capillaries and "exhalents being restored, the remaining super-"fluous heat passes off by sensible and insensible "perspiration. The stimulus of morbid heat "and of morbid stricture being removed, the "morbid association seems also broken, by the "sudden and powerful impression on the sensa-"tions; in fact, the inordinate action of the

" heart and arteries subsides, and the harassed " and toil-worn patient sinks into that peaceful " sleep, which nature has provided as the solace " of our pains and sorrows, and the restorer of " our strength."

This vigorous and invaluable remedy may be used in fever, with most safety, when the " exacerbation is at its height, or immediately " after its declination; but it may be safely used " at any time of the day, *when there is no sense " of chillness present, when the heat of the sur- " face is steadily above what is natural, and " when there is no general or profuse sensible " perspiration.* For, if either immersion in the cold Bath, or the affusion of cold water be used during the cold stage of the paroxysm of fever, the consequences are highly dangerous; " the " respiration is nearly suspended, the pulse " becomes fluttering, feeble, and of an incalcu- " lable frequency; the surface and extremities " becomes doubly cold and shrivelled; and the " patient seems to struggle with the pangs of " instant dissolution." Avoiding then such evident misapplication, and attending to the precautions laid down, this important and active remedy may be resorted to without danger, and with certain benefit in this highly dangerous disease. To enlarge upon this subject were very easy, but as what has been said relates chiefly to acute diseases, which admit of little delay in their treatment, and but seldom of a visit to a watering-place; and as the cold affusion may be practised at any time, and in any place, where necessity may point out its use, I shall proceed now to give some account of the use of the Bath in chronic disorders, and in those local affections for which LEMINGTON is most frequented. What has already been said will throw light upon the *nature* of the cold Bath, and help to illustrate several points which are hereafter to be treated.

THE intention of using cold water in chronic diseases is very different from that in acute fever, though, exciting the general system, and by that means producing re-action upon the surface, is the method, in both, by which the desired effect is obtained; for, in the latter, we permanently *diminish* the heat of the system, by inducing copious perspiration; and having once performed this properly, by the instantaneous shock of cold producing a sufficient re-action, we have seldom any thing more to do: but, in the former class of diseases, our object is to permanently *increase* the general temperature, by exciting a healthy re-action, and *prolonging* and increasing its salutary operation by the addition of moderate exercise; taking care to *renew*, as often as is necessary, the important application of the Bath. By this treatment, the nervous energy is roused and excited, the constitution is invigorated, the moving powers are strengthened, and peevishness, debility, and disease give place to cheerfulness, health, and activity. Indeed the most general indication, for the use of the cold Bath, is the appearance of all that long train of listless, fretful, disagreeable symptoms, usually called nervous.

THIS remedy seems also remarkably efficacious in removing that small, slow, irregular fever, which too frequently preys upon the spirits, and undermines the health of the sedentary and studious. To this disease, the bane of Genius, and the pest of Literature, we owe the loss of many a promising young adventurer in the world of Science: more dangerous from its apparent insignificancy; and so often fatal, because so seldom noticed; it proceeds slowly, but surely in its work, and saps the foundations of life, before any precautions are taken to resist it. This fever generally arises from too long continued, or too great intensity of thought, without a sufficient portion of rest and relaxation. Its commencement is noted by a partial loss of appetite, want of sound natural sleep, hot hands, quick pulse, a general listlessness, unfitting the mind for exertion, rendering study irksome, and business fatiguing; as the disorder advances, it paves the way for Hypochondriases, Consumption, and a long train of dangerous and destructive diseases, without ever, till its ravages are too far advanced, totally preventing the usual occupation. In this disease, cold Bathing, by its general tonic powers, appears to act with more benefit than any remedy which we possess; and, when conjoined with a removal from ordinary employments, with an abstraction from every thing which may strain or disgust the mind; together with fresh air, gentle exercise, novel society, and agreeable amusements of a pleasant watering-place, it seldom fails to be completely successful. There are many other disorders, and circumstances of disorder, in which cold bathing is of the highest importance: but as I propose taking notice of most of these in the catalogue, and of noticing together with cold bathing, whatever other methods of relief and kinds of treatment may be individually necessary for each particular malady. I shall not extend this article to an unnecessary length by saying any more upon the subject here, but shall refer the reader to that part of the book which I have just mentioned. It may, however, be proper to caution the invalid against the use of the cold Bath, in cases where it may do mischief, and to point out those indications, by which it may be easily known that its powers have been improperly applied, continued too long, or carried to too great excess. "When cold bathing does harm, "it is precisely when the powers of the body are "too languid to bring on re-action, and the "chilling effects of the bath remain unopposed. "When the patient feels the shock of immer-"sion very severely, and from experience of its "pain, has acquired an almost insuperable dread "of its application; when he has felt little or "no friendly glow to succeed the first shock, "but, on coming out of the bath, remains cold, "shivering, sick at stomach, oppressed with "head-ache, languid, drowsy, listless, and averse "to food and exercise during the whole day, we "may be sure the shock has been too severe, "the bath too cold, and no re-action produced, "at all adequate to the contrary impression on "the surface of the body."

The Cold Bath should never be used while the body is under profuse sensible perspiration; but, when the body is beginning to grow warm, or even in "the commencement of sweating," it may be used with safety, and with evident benefit. Indeed the most proper time for plunging into the Bath, is after a general glow is perceived from the effect of gentle and moderate exercise; sufficient to rouse the vital principle into action, but not sufficient to induce fatigue. For invalids, therefore, labouring under the effects of debility, recovering from a tedious illness, or worn down by some hopeless disorder, gentle exercise, immediately before the use of the bath, is in all cases indispensibly necessary. By this means the constitution will be rendered more able to bear the shock, and the vital re-action will be more certain and more powerful. But, when perspiration has been profuse and general, when after considerable heat and fatigue, the body has been suffered to cool again, or particularly after any violent and long continued exertion, excessive sweating, and general exhaustion, the *cold* Bath should *never* be immediately used.

It has been often remarked, and I believe it is a very common practice with a great number of people, to undress, after being heated, and stand shivering upon the edge of the water, in order to suffer themselves to cool before they venture in; thereby supposing that they prevent the danger they should otherwise incur, of going in while warm; but, of all notions this is the most erroneous: for, if they are only moderately warm, the safest method is to plunge in immediately; but, if as I said before, their heat has been great, and their perspiration general, they had much better omit it altogether; or if they will bathe, waiting till the naked body is still more cooled, and exhausted by evaporation from the surface, tends doubly to increase the danger, and *decrease* the powers of vital resistance.

UNDER all circumstances, therefore, in which the Bath is advisable, I speak particularly to invalids, the best, and safest method is, to put off the clothes as quickly as possible, to immerse suddenly, and without delay, the whole body in the bath, to stay in no longer than is necessary for that purpose; upon coming out, to wipe, or have the skin rubbed dry with a cloth, and to take exercise in proportion to the strength, as soon as possible afterwards.

THE peculiar cases in which cold bathing should be avoided, and the nice shades of distinction, which, at times, may render its operation salutary, or otherwise, will be best learnt from consulting the opinion of some medical adviser, who has an opportunity of weighing the particular causes and symptoms, which alone can properly determine the judgment. It may suffice to enumerate here a few of those cases, in which it would be decidedly hurtful. In permanent morbid obstruction, or inflammation of the viscera; in the chlorosis which attacks young females, attended with pain in the head, increased sensibility to cold, and general langour; in cases of true dyspepsia (indigestion) produced by high and stimulant living; in all those who are liable to a strong determination of blood to the head, and especially to the lungs; and in children of a delicate frame and a strong tendency to rickets. When mischief occurs to people of a weak and irritable habit from cold bathing, it is in general from the neglect of proper caution, and arises, not from the use, but the abuse of the Bath.

To illustrate the foregoing observations, and to give the invalid some tolerable idea of the nature of Bathing, I shall subjoin the following sketch.

All bodies have a power of conducting heat, but in different degrees: when of a higher temperature than surrounding objects, they give out their own heat to those objects; when of a lower, they receive heat from them. Water is a better conductor than Air, and Air in motion than Air at rest. The human body has a power of generating heat within itself. When, therefore, the body is plunged into cold water, there is a sudden and powerful abstraction of heat, producing to the feelings a very strong sense of cold, this is immediately followed by a vehement effort in the whole arterial system to overcome the impression upon the surface, producing an equally sudden and violent quantity of heat; and an universal sense of warmth, sufficient to make even the cold medium by which the body is surrounded appear of a tolerable temperature. This constitutes what is called *re-action,* which is the chief and most important end of the Cold Bath, and which under proper limitations, and carried to a proper extent, forms the principal medical intention of cold bathing. But this can only be salutary when the body is speedily removed from the water, for, if the immersion be continued too long, the body becomes chilled again, the hands and feet become cold and insensible; and the vital powers being exhausted, by the constant and rapid absorption of heat from the surface, become unable to supply the waste, and the body sinks down at last, under the united pressure of cold and fatigue.

Another very important circumstance also, necessary to be known on the subject of cold bathing, " is the great sympathy which exists " between the skin on the one hand, and the " stomach and diaphragm on the other. This " is shewn in a variety of instances, and is " mutual, since either part may be affected by

“ an impression made on the other. A striking
“ instance of it is seen in the effects of
“ gradual immersion in a cold bath, on persons
“ of a delicate and irritable habit, where, as soon
“ as the surface of the water reaches the level
“ of the stomach and diaphragm, violent sobbing,
“ shivering, and often sickness, are the
“ consequence. On the other hand, it is well
“ known, that in acute fever, a glass of cold
“ water taken into the stomach will sometimes
“ relieve a dry burning skin, by inducing copious
“ perspiration. Likewise, the shivering and
“ numbness of limbs consequent on long exposure
“ to cold and wet, are soonest removed by a
“ bladder full of hot water applied to the pit of
“ the stomach. It is often necessary to advert
“ to this sympathy of parts, in regulating several
“ circumstances that may occur when the cold
“ bath is used medicinally, as, whether it should
“ be employed when the stomach is full, or
“ when empty, and the like.”

ON THE WARM BATH.

Many people are deterred from the use of the Warm Bath, by an opinion that it has a debilitating effect upon the constitution; so far from this being the case, its operation is directly contrary, and the only time in which it can produce this effect is, when its heat is carried to excess, many degrees above the animal temperature, as the natural heat of the Bath Waters fresh from the pump, &c. But, Water of this temperature should rather be called hot, than warm, and is proper only to be used in paralytic, and some few other cases, and under the immediate direction of professional judgment. The heat at which the warm bath may be said to commence, is about 91° or 92°, and its range of temperature, from thence to 100° or 105°, Fahrenheit. The heat of the human body, as ascertained by the insertion of the bulb of a thermometer under the tongue, is about 96°, sometimes as high as 98°, and these degrees seem to be the same, with little variation, in all parts of the world; neither affected, in the healthy body, by the heat of *India*, or the cold of *Greenland*. But this, however, relates only to the internal temperature of the body; the heat of the skin is very variable, and generally considerably below the degree of animal heat. This arises from the great cooling process of evaporation, constantly going on over the whole surface; its sensibility to all external impressions; and its exposure to the atmosphere, which seldom arises so high as 98° even in the highest heats of summer.

From a view of these causes, we shall be easily led to perceive why a warm bath, heated to 98° gives a very strong and decided sense of warmth to the skin; and why a sensation of slight warmth, rather than chilliness, is felt, even several degrees below this point. When, however, the bath, for medicinal purposes, is raised above the degrees of heat, to which we have confined our definition of the warm bath, it then becomes a direct stimulus to the whole system, rapidly accelerates the pulse, increases the force of circulation, renders the skin red and painful, and the vessels full and turgid.

The warm bath, on the contrary, by inducing a copious flow of perspiration, may be used with much advantage, even in cases where the animal heat is already too high; and though from the rapid conducting powers of water, as a medium, the body can bear a much higher degree of heat in atmospheric air, yet so long as the heat of the water is not carried so high as to prevent perspiration, the final effect of the bath will be a very great diminution in the animal temperature.

Warm Bathing seems particularly well calculated for cases of Hypochondriasis, in those of a very weak and irritable habit, for the early stages of consumption, for spasmodic and hysterical cases, and for a deficient secretion of bile; indeed, in almost all cases of a diminished or depraved action in any part of the alimentary canal, in colics, and in obstructions of the bowels, it is highly advantageous. But the grand and sovereign indication for the use of the warm bath, is all that train of painful, tiresome, frightful, and sometimes even disgusting disorders, that make their appearance upon the skin; in these the warm bath is, generally speaking, by far the most efficacious remedy with which medicine is acquainted; particularly in scorbutic and leprous complaints, the whole class of herpetic eruptions, and that hot, tense, parched and painful state of the skin, in which the secretion of perspiration seems morbidly defective, and sometimes completely destroyed; and in which the whole external surface of the body, with the exception of the face, is covered with large patches of dry, hard, whitish scales, with a margin of red. These scales are constantly peeling off in great quantities, resembling bran in appearance, and the hands, arms, and legs seem particularly affected: the skin sometimes also cracks in places, is extremely painful, and discharges a thin sanies. In these last diseases, (the diseases of the skin) the LEMINGTON WATERS seem to possess a power, almost peculiar to themselves. Whether it be their saline, or sulphureous impregnation that occasions those astonishing effects, which we daily see them producing: or whether it be the conjoined effect of the external application of the water, and its salutary action upon the digestive organs, when internally administered, may hereafter be a subject of useful enquiry. I shall not enter upon it here, as I have promised to engage in no speculations, and because it is also very unnecessary; for, where the facts are so plain, and there are so many living witnesses to testify their truth, they cannot stand in much need of any aid from theoretical plausibility. These diseases in general require a low temperature of the bath, just rising above the tepid, and not carried above 96° or 97°. We here want a bath sufficient to soften and relax the skin, and create perspiration, without being hot enough to act as an active stimulus, which would be prejudicial to the diseased parts. The degree, at which patients in general should go into the warm bath, will of course vary according to circumstances, from 94° however to 99° or 100° may be set down as the average heat. The time of immersion should also on the average, be from ten to twenty minutes. But, in cases of Palsy, these rules by no means apply; there, where the circulation is weak and sluggish, and the heat of the parts much below the healthy standard, the direct and powerful stimulus of heat, assisted by warm and continued friction, is highly and decidedly proper. In cases of that nature, to have the water as hot as the skin can bear, with a strong degree of saline impregnation, and to continue the parts a long time immersed, are circumstances that ought always to demand attention, and they will very much contribute to restore the diseased members to new life and vigour.

Upon the whole, I think we may consider the warm bath, under proper restrictions, as a remedy much safer for very weak and irritable habits than the cold. In such persons there is generally a languid circulation, and of course a great inability to resist, by proportionate re-action, a sudden and powerful shock of cold. In local inflammations, particularly in parts essential to life, and where the formation of matter is the end principally sought to solve the general inflammation, the application of warm fomentations has long been the means principally used ; and experience has amply confirmed the wisdom of this practice. As a pediluvia too, or application to the feet, warm water may be used with most striking benefit in the incipient stage of slight fever, or any general irritation arising from cold, or connected with disturbance in the stomach and bowels. Upon the first appearance of sore throat, it is very customary with many people to tie a piece of flannel round the neck, and immerse the feet in warm water, this simple remedy is known in every family, and has often cut short many a dangerous attack.

In persons of a very full and gross habit, and subject to a strong determination of blood to the head, the warm bath may sometimes be attended with danger, by increasing the circulation very rapidly for a time, and thereby inducing apoplexy. In most cases where warm bathing is recommended, I should advise a flannel waistcoat to be worn next the skin, which will be found highly serviceable in keeping up a regular temperature, and defending the relaxed and sensible skin from the sudden and sometimes dangerous impressions of external cold. The best time to use the bath with weak and irritable habits, is in the evening, before going to bed, as one of its most usual effects is to allay irritation, to quiet the constitution, and bring on a state of sound and refreshing repose.

It can scarcely be necessary to distinguish between the warm and tepid Bath, after what has already been said, but, in general, we should call a bath tepid, from 85° to 92°, that being the range of heat which produces the smallest possible effect upon the skin. There are some cutaneous disorders which will not bear a temperature higher than 90° without pain, and an evident increase in the violence of their symptoms, but which will nevertheless be very greatly relieved by a bath of about that temperature, or a degree lower. In rheumatic affections, and all those diseases that require a gradation in the heat of the water, from a moderate temperature to one as cold as can be borne, the tepid bath forms a very useful application in the beginning. It has been also the means of leading many people on to the use of the cold bath, in whom, there was before an insuperable dread of cold water, for the name of a tepid bath carries with it, in idea at least, an approach to warmth.

The tepid bath, is, however, a most excellent application in itself, whenever the body has been over fatigued by violent exertion, long watching, or agitation and anxiety of mind. In these cases, it may be carried to the verge of the warm bath, and will have an excellent effect in refreshing the strength and spirits, and invigorating the system. By its moist and softening powers, it is of singular service in promoting the growth of young persons, and retarding a too rapid approach to the firm and compact state of manhood; for the same reason it is strongly recommended by Dr. Darwin, and is much used in the first approaches to the decline of life, for preventing that rapid condensation of fibre, and unyielding rigidity of the general solids, which cramps the freedom of action, and prematurely stiffens the sinews of old age.

Some Account of the Diseases

IN WHICH THE

LEMINGTON WATERS

HAVE BEEN FOUND SUCCESSFUL,

With directions for their Use.

WE now come to a more difficult part of our task, than any which has preceded it, for in professing to give an account of all those diseases, in which my own experience can bear witness to the efficacy of the LEMINGTON WATERS, I must be understood with great latitude. There is no disease, however simple in appearance, that may not spring from, or be complicated with another; and there is no plan of treatment, applicable to any general disorder, which may not, in one part of its progress, require to be changed for another, or occasion serious consequences by a perseverance in adhering to it. When I say, therefore, that the waters are applicable to such, or such a disease, I must be understood to mean, that they are applicable to the general and most customary appearance and symptoms of that disease, and not to every variety of its combinations. The most eminent men in the profession often find themselves deceived by the proteus shapes and illusive appearances of many perplexing disorders; and no qualification ranks higher, or is more deservedly valued, than that strict attention and accurate observation of diseases, which enable them to note, with facility, "even those slight-" er shades of difference which distinguish them " from each other." I shall begin then, as a very general and prolific source of numberless disorders, as a great aggravation to others, and as a point upon which I have had much experience, with

Disorders of the Digestive Organs.

THE late very excellent works of Mr. ABERNETHY on this subject, are well known to all the medical world; but, as I am chiefly writing for those, unacquainted with medical affairs, and, as many may wonder why I should place this class of disorders in so conspicuous a light, a class which, they had but little *noticed* from its effects and causes not being so immediate and striking, I shall venture to quote from one of the works of that Gentleman, a few lines, on the variety of diseases which may result from this cause.

" IT may produce in the nervous system, a diminution of the functions of the brain, or a state of excitation, causing delirium; partial nervous inactivity and insensibility, or the opposite state of irritation and pain. It may produce in the muscular system, weakness, tremors, and palsy, or the contrary affections of spasm and convulsions. It may excite fever by disturbing the actions of the sanguiferous system; and cause various local diseases by the nervous irritation which it produces, and by the weakness which is consequent on nervous disorder, or imperfect chylification. Or if local diseases occur in a constitution, deranged in the manner in which I have described, they will become peculiar in their nature and difficult of cure. Affections of all those parts which have a continuity of surface with the stomach; as the throat, mouth, lips, skin, eyes, nose, and ears, may be originally caused or aggravated by this complaint."

THOUGH I cannot exactly agree with Mr. ABERNETHY to the very full extent of all that he has here laid down, yet, in the main points of his doctrine, I believe every sensible man will readily coincide with him. That numberless disorders *do* arise from an unhealthy state of the digestive organs, and that numberless others, which originated from a different source, may produce diseased actions in those organs, and become thereby prolonged and aggravated themselves, after the cause originally producing them has ceased, cannot I think be doubted. For let us consider, for a moment, the vast importance of these organs in the animal economy. They are the sole receptacles of the food, and extract from it all that nutriment by which the body is supported, whether in health or disease. They are the medium, through which the powers of medicine are exerted, and through which, the vital functions are to be exalted, when too low; diminished, when too high; and corrected, when irregular or depraved: and by sympathy with them too, even the organs of sensation and voluntary motion are frequently and powerfully affected. For how can we account for the otherwise inexplicable effects of the WATERS at LEMINGTON, but upon this principle? Is it not by their easy and gentle action upon these organs, by their effectual removal of all obstructions from the alimentary canal, by their promotion of all the healthy secretions and excretions, and by their correction of all those that are morbid, in short, by carrying away every thing which may obstruct nature in her usual progress, and leaving her at full liberty to conduct her own work; is it not by these means that appetite and digestion are improved, that the weak recover their strength, and the emaciated their flesh; is it not by these means that irritability is allayed, that the hypochondriacal regain their spirits, and the nervous their steadiness; is it not by these means that absorption is diminished or increased, that parts which dwindle are renovated, and that those which are useless or burdensome, are speedily removed.

By an attention to these remarks, it will be now easy to perceive the strong connection between the medical treatment of this class of diseases, and a very numerous train of others which have no *supposed* connection. In general, when there are no incidental circumstances, immediately forbidding, the diet of patients labouring under any of these disorders should be light and nutritious; the food should be such as is quickly and easily digested, and the drink as moderately stimulating as the habits of the individual will bear; particular rules cannot be given, that will apply in all cases, and in all constitutions; but, every one should be cautious in avoiding all those things that appear to disagree with the stomach. The warm bath is very frequently serviceable, in cases where the digestive organs are primarily affected: and in many secondary diseases which arise from this cause, and particularly local diseases, the cold Bath, and the topical application of cold water are applied with remarkable and obvious benefit. But of this more will be found under each particular disease. I have been thus diffuse upon this head, in order to give the invalid a general notion of the numberless forms and varieties of disorders, under which, by their action upon these organs, the LEMINGTON WATERS may afford means of relief. It would occupy far too much time to enumerate all these; it may therefore suffice to have given this *general* index to the nature of the Waters, and I shall now proceed to set down the ranks and classes of disease, rather than the individual modifications.

Bilious Complaints.

THE secretion of Bile has such an important end to answer in the animal economy; it is liable to be affected in so many ways; to be increased, diminished, or depraved; that there are few persons, who have not at one time or another, been sufferers from its effects. An excess of Bile, though it sometimes occurs, is very rare indeed; and it has been unfortunately too much the practice, for many years, of attributing all derangements of the digestive functions to an accumulation of bile upon the stomach. So far from this being the case, it is a fact well known to anatomists, that the bile cannot possibly enter the stomach, unless forced into it by the effect of vomiting, or what very rarely happens, by an inversion of the peristaltic motion of the bowels;

for the bile duct terminates in a part of the intestinal canal, called the Duodenum, below the orifice of the stomach. It is customary to take an emetic for this supposed accumulation; the gall bladder is in consequence forcibly compressed, the bile is rapidly poured out into the intestines, and thence driven into the stomach, which, being vomited up, convinces the patient that he was right in his notions.

But, though an excess of this secretion is so unusual, a deficiency is as remarkably common; and we often find, the alvine discharges of patients, labouring under a *fancied* excess, in a state that indicates a most unnatural deficiency. Many eminent men have concurred in ascribing to an inactive state of the liver, and the necessary diminution of bile, many of the most grievous diseases: and their means of cure, are confined to whatever may excite the liver to action, and strengthen the stomach and bowels. These intentions, as experience has proved, are most effectually answered by a course of LEMINGTON WATERS. The secretions of bile are speedily corrected and increased, and, if a few alternative doses of some mercurial combination are exhibited at intervals, a very short period generally serves to entirely remove the disease.

The diet should be such as is recommended under the preceding head.

Visceral Obstructions.

Under this very complicated term, I would be understood to mean, the many and various obstructions to the right actions and secretions of the viscera, whether the liver, stomach, bowels, or any other organ concerned in the digestion of the food. We find them sometimes costive for a time, and then alternating with fits of purging; sometimes pouring out their secretions properly, sometimes in excess, and sometimes in very diminished quantity; sometimes they are irritable and are excited to action by the weakest means, and sometimes it is very difficult to excite them at all. Whatever will induce them to regularly pour forth, and evacuate their own fluids, without producing any strong degree of irritation, is the best method of relief. Weak purgatives, in small doses, and at regular intervals, are best adapted to this purpose, and of course, in all these derangements of the viscera, the Lemington Waters have long been pre-eminently successful. The diet, in these disorders, need not materially differ from that which is laid down for disorders of the functions in general.

Obstinately Costive Habits.

I have seldom found any thing more necessary in persons afflicted with a habit of body, preternaturally, and obstinately costive, than such an attention to diet as is recommended above, and a regular course of the LEMINGTON WATERS. The frequent use of strong and violent drastic purgatives produces only a temporary relief, and they most frequently aggravate the cause of the complaint, and irreparably injure the constitution.

Dyspepsia or Indigestion.

THE pains in the stomach, squeamishness, want of appetite, heart burn, hiccup, costiveness, languor, lowness of spirits, and uneasiness and anxiety after eating, which characterize this disease, are symptoms very well known, and very universally felt, amongst all those, who have impaired their stomach and bowels by high living, inordinate eating, frequent intoxication, too close application to study, excessive indolence, or irregular passions. In these cases the diet should consist of light meats, fish and shell fish, and the substitution of biscuit in the place of fermented bread. Where the LEMINGTON WATER is drank regularly, wine and water, or weak spirits and water may be taken at meals; moderate exercise, and the employment of the warm bath must not be neglected, and, in some few cases, the cold bath will be adviseable.

Hypochondriasis.

The disordered state of digestion, one of the most distinguishing marks of this disease, the occasional disappearance of the dyspeptic symptoms, and the consequent melioration of the gloomy apprehension and melancholy prospects of the patient, make it highly probable that this disease, for the most part, may be said to have its origin in the sympathetic affection of the nervous system, with the disturbance of the digestive. And though the Patient is not always immediately relieved by the partial abatement of the visceral disorder, it is not to be argued from thence, that the hypochondriacal symptoms do not arise from the cause which I have assigned, since the Brain having once become affected, may continue in a state of morbid irritability, after the cause producing that irritability has ceased to exist. For this reason, I would most strongly urge the necessity of diverting the Patient's mind, and removing, if possible, every cause of fretfulness and anxiety. The Water should be given him in regular quantity, and at a stated time, and uniformity should be observed even in the hours of his meals. Gentle exercise is highly beneficial, and should precede the use of the warm bath. Amusements of every kind, cheerful company, absence from home, and a succession of new objects, will tend very much to restore a state of mental sanity, and assist, in the highest degree, the salutary operation of the Water.

Cutaneous Eruptions.

To describe, even with an approach towards correctness, the very numerous affections of the skin, would occupy far more room than can be allotted to this pamphlet. I have already said enough, in the chapter on the warm Bath, to convince the unprejudiced, as far as my experience may be relied upon, of the efficacy of the Waters, in diseases of this nature. All that I shall add in this place, is to recommend, that after the regular use of the LEMINGTON WATERS, and of the warm saline Bath have been given over, the patient would not depend so very far upon the present cure of his disease, as to neglect all precautions, but would occasionally take a few doses of the Salts prepared from the

Waters, and not forget when opportunity offers, to cleanse and relax the skin by a common Bath of Tepid Water.

Scrophula.

THE thousands afflicted with this inveterate malady, which seems to be every day gaining ground upon us, render it highly desirable that something should be discovered which will put a final stop to its ravages. Several pretended remedies, have, at different times, been held up to the Public as possessing this valuable property, but they have all sunk into oblivion before the test of experience. The Waters of the Sea, MOFFAT, HARROWGATE, and LEMINGTON are among the means which have been found to afford the most permanent relief, though a certain and general specific is still a desideratum. As the Waters of the latter, however, from every day's experience acquire more and more celebrity for their efficacy, in this too general and afflicting malady, I shall speak rather more largely than formerly on its nature, and the means of distinguishing it from other diseases. As the disease so commonly appears in early life, and its tendencies can then be best combated, it is a matter of the highest importance, that the means of ascertaining its presence should be generally known. When children are observed to have a florid complexion, and a fulness in the face more than is common to others; when the usual appearances present themselves, of hard tumours, chiefly in glandular parts, which are rarely affected with pain, or brought to suppuration; when there are swelled and sore upper lips, with soreness about the nose and cheeks, scrophula may generally be suspected. Besides these, a multiplicity of symptoms occur at different times, though only one or two may be present in any individual case. Thus the eyes being inflamed, or glued together, so that they cannot easily be opened in a morning, a sharp humour issuing from them upon first awaking, or dry scabs forming on or about the elbows, are appearances equally indicative of a scrophulous tendency in the habit. The disposition to Scrophula is allowed pretty generally to be hereditary, though sometimes it will not appear for one, or even two generations, but springs up again in the second or third. A variety of causes have been mentioned, as tending to produce this disease, viz. crude, indigestable food, bad water, living in damp low situations, its being hereditary, &c. But these may perhaps be considered rather as exciting or predisposing causes only; however this may be, the occurrence of Scrophula seems to depend upon, or at least to be intimately connected with general constitutional debility; and more especially, debility, or some such affection of the Lymphetic system, as causes the glands to run into induration and swelling; for Scrophula always commits its ravages primarily upon the Lymphatics. And that debility is the origin of the evil, appears more fully, from the nature of the remedies employed, which are always ultimately of tonic and invigorating. Between the latitudes of 45 north, and the higher latitudes, Scrophula rages with the greatest violence—but is never known in those climates which are warmer and more equable in their temperature.—Persons are constantly affected who go from hot to cold climates, says Mr. Hunter, and those are cured who go from cold to warm ones. Scrophulous tumours, attacking any other part than the lungs, are not speedily mortal, though death very frequently occurs, after a long period of lingering misery, from scrophulous affections of the bones, and not uncommonly, tumours of a scrophulous nature, occurring in soft glandular parts of the body, degenerate into a species of ulcer, having much of the fatulity, and many of the frightful symptoms of Cancer.

In the treatment of Scrophula, various morbid affections, occurring in various parts, will require remedies suited to their nature, these, however, may be easily and simply divided into such as are general, and such as are local. As far as general treatment goes, to improve the state of the System, and promote the spontaneous amendment, which scrophulous affections frequently undergo, is the object for which I should recommend a trial of the LEMINGTON WATERS. In those of a gross habit, a free exhibition of the water will be highly proper, and the frequent use of the cold Bath. But for weakly people, whether children or adults, I should prefer the warm Bath, at least, for a certain time. Bark, Iron, and Tonics in general, will be almost invariably indicated, but they should never be entered upon till the bowels have been well opened by a fortnight's use of the water; they may then be employed with advantage, and will assist the effects of the cold Bath.—In mentioning the local treatment of Scrophula, I shall, for the sake of distinction, enter upon a fresh section, especially as the disease termed White-swelling, which is merely a scrophulous local affection, is very common, often much relieved by the LEMINGTON WATERS, and not always known to originate in Scrophula, by persons who come hither for relief.

Scrophulous Tumours, and White Swellings of the Knee and other Joints.

We have already spoken upon the medical treatment of Scrophula; it may be sufficient to remark, in this place, that, if the rules be attended to, which we have laid down for the prevention of indigestion, and the constitution be preserved in due vigour, Scrophula may be suspended, or kept dormant in the system during the whole of life. But even when this disease has established its dominion, and scrophulous tumours and enlargements have made their appearance in different parts of the Body, I have always found the Waters at Lemington of very material service. When one or more joints become affected, and the disease assumes the shape of what is called white swelling, I would advise the whole joint to be wrapped up in several folds of old Linen, and kept constantly wet with the cold saline water. The use of cupping will also be adviseable, and it should be repeated according to the urgency of the symptoms. The internal use of the Water must be steadily persevered in, for a length of time. The diet should be low, and chiefly vegetable, till the local affection is evidently abated, after which, the body may be supported by nourishing food, and the cure completed by stimulant applications. By these means, many a limb has been saved, that would otherwise have been condemned to the knife. When the first external symptoms are hard and indolent enlargements of the glands, in the neck, behind the ears, &c. the same treatment is to be pursued, with the exception of cupping, as is recommended for the first stage of white swelling.

Phthisis Pulmonalis or Consumption.

In the earlier stages of this most destructive disease, when we first begin to perceive the short, dry, troublesome cough, the slight difficulty of breathing after exercise, and the stitches in the side, and accelerated pulse of the unfortunate patient, I have often found the Lemington Water most decidedly beneficial in removing these threatening symptoms, and thereby preventing the permanent occurrence of a disease, which no medical skill has as yet been found competent to remove, when once it has firmly fastened upon its victim. Though the Lemington Waters are thus successful in preventing this terrible malady, they have not gained a due portion of credit in the eye of public opinion, for it is only in the more advanced stages, when *all* remedies are equally futile, that the disease is commonly known by the name of consumption. Yet, even when the fever, heat, cough, and pain in the side, are become very considerable, a gentle course of these waters will be found a most material assistant to other more active, though certainly not more useful remedies. A milk and vegetable diet are here most urgently called for. Decoctions of Barley, Sago, Rice, and the Lichen Island Icus may be taken at pleasure; ripe subacid fruits and shell fish may be taken also with safety, provided they do not disagree with the stomach, and do not aggravate the dangerous symptoms.

Tumours.

The variety of diseases which come under this name, and the almost unlimited extent to which it is employed, would make it necessary for me, in a work intended for surgical perusal, to give an exact definition of the kind of Tumours, concerning which I might be going to treat; but in this place, such exactness is unnecessary; I would be understood to mean, in general, not simple enlargements of bones, joints, &c. but tumours of a new and diseased organization, amongst which are included most of those

Tumours commonly called Glandular.[*] Slow, and insiduous in their progress, but sure, and fatal in their effects, there are some among their number, which may be fairly reckoned as the most terrific diseases which can afflict humanity: but unfortunately, they are generally trifled with till assistance is too late, and the best of remedies gets into disrepute, because seldom permitted to be put in effect, while the permission can be of service. There are few tumours, however malignant they may afterwards become, which might not in their origin, have been either removed, discussed, or preserved for an indefinite length of time in a state of indolence and inactivity. Where removal is not attempted in the first instance, discussion may be tried; but with this one invariable caution, that in no instance is the use of stimulant applications to be thought of, till after the inflammatory tendency has been subdued, the pain relieved, and the growth of the tumour decidedly stopped. To effect these latter most important intentions, there is seldom any thing more necessary, in general, than to abstract all superfluous heat, by means of evaporating washes applied to the part,[‡] and to regulate the diet and the state of the digestive organs, for the manner in which this is to be done, I would refer my readers to the first part of this Chapter, which treats of the regulation of those organs.

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[*] Such are Cancerous Tumours in their origin, and the innumerable indolent glandular Tumours, confounded with Cancer.

[‡] Soft Linen, dipped in the Lemington Water, when it can be had fresh from the Spring, I have always found a most effectual application.

Besides the disorders which I have here enumerated, there are many other varieties, for which the Lemington Waters may be used with safety and success. I would earnestly recommend them in cases of DISTORTED VERTEBRÆ, which so much depend for relief upon constitutional causes. They are also most amply serviceable in PAINFUL or SUPPRESSED MENSTRUATION, attended with loss of appetite, general wastings, heat, irritation, difficult breathing, and oppressive langour.

Finally, to the sedentary and the studious, to the man of pleasure and the man of business, to all who have suffered the current of life to stagnate, for want of active exercise, or have driven it on too rapidly by indulgence and excess, let me once more recommend an annual resort to the salubrious waters, the regulated temperance, the moderate exercise, and the choice of cheerful company, or secluded retirement, which *Lemington* so universally affords. They have there every possible accommodation, they are in sight of a most beautiful country, with roads proverbially excellent, and within half an hour's ride of the picturesque beauties of *Guy's-Cliff*, the majestic ruins of *Kenilworth*, and the fine bridge, handsome town, and magnificent castle of *Warwick*.

FINIS

H. Sharpe, Printer, Warwick.